Math 102: Calculus II

Spring 2022

Instructor: Dr. William Worden
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Office: Herman Brown Hall 420
Classroom, time: DBH 180, MWF 10-10:50am
Course webpage: https://canvas.rice.edu/courses/46603

Office Hours: TBD. My posted office hours are time that I reserve for students—feel free to come without notice, and stay as long as you like. If you cannot make it during posted hours, or you would like to talk one-on-one, please send me an email to set up an appointment.

Calc Help Sessions: Monday through Thursday from 7-9pm, location and start date TBA.

Piazza: This class will use Piazza, an online forum for asking and answering questions. I will check in frequently on the Piazza page and answer questions in as timely a manner as possible. Students can also answer other students' questions (and I encourage you to do so!). You can sign up for Piazza here:

piazza.com/rice/spring2022/math102

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Use the access code **MATH102S03** to access the course. **You can also access Piazza via the Piazza tab on Canvas**. Note that other than office hours, Piazza is the preferred method for asking question about course content (homework, concepts, etc.). When you ask a question on Piazza, the whole class benefits from the discussion. In addition, you can ask your question anonymously, if you prefer. When a new question appears, I will get email notifications, so there is no need to send a separate email about a question.

Calendar: A calendar for the course is maintained on the course webpage. It gives a schedule of the material to be covered each day, and links to resources and class notes.

Textbook: OpenStax Calculus Volume 2. This can be downloaded as a free pdf at https://tinyurl.com/y2q8vxzr. This book is also available in hardcopy, and can be purchased at https://tinyurl.com/ydcx36kl.

Course Delivery: This course will be conducted over Zoom until January 24th, per Rice policy. Students may access the Zoom meeting via the link provided on the Zoom tab of the Canvas page. Sharing video on Zoom during class is encouraged and appreciated, but not required. I understand that some students do not have the ability to share video (e.g., a bad internet connection), and some students are just more comfortable not sharing. I will (try to) open the meeting 10 minutes before the start time, and will be happy to answer questions or chat during this time. **Please be logged on and ready to start promptly at 10am.**

Course Aims: Whatever math we learn in this course, we will first and foremost be guided by the 4 axioms of Dr. Federico Ardila-Mantilla:

> Axiom 1. *Mathematical potential is distributed equally among different groups, irrespective of geographic, demographic, and economic boundaries.*
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> Axiom 2. *Everyone can have joyful, meaningful, and empowering mathematical experiences.*
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> Axiom 3. *Mathematics is a powerful, malleable tool that can be shaped and used differently by various communities to serve their needs.*
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> Axiom 4. *Every student deserves to be treated with dignity and respect.*

The first part of this course will focus on techniques of integration, beginning with a review of $u-$substitution. We will focus on concepts and somewhat de-emphasize memorization and niche integration techniques. This will give us the ability in the second part of the course to devote a large amount of time to series, a powerful tool with important real-world applications that also answers the question: how can I compute the number π to one-thousand decimal places with only pencil and paper (and a lot of time)? The last part of the course will focus on polar coordinates and parametrization, two essential tools for studying curves in the plane, and finally complex numbers.

Exams: There will be two Midterm exams, and a Final exam. The first midterm will be on **Wednesday, February 9th** and the second will be on **Thursday, March 31st**. Both will be from **7-9pm** in the evening, in person with location TBD.

The time, day, and location for the Final Exam will be determined by the Registrar's office and is not currently available. It is the policy of the Mathematics Department that no final may be given early to accommodate student travel plans. If you make travel plans that later turn out to conflict with the scheduled exam, then it is your responsibility to either reschedule your travel plans or take a zero on the final.

The exams are closed note, closed book, and use of a calculator or any other outside resource such as a computer, a website, or another person is prohibited. Any evidence of cheating will be promptly referred to the Honor Council.

Homework: The course will have both online and written homework. WebWork will be used for online homework, and may be accessed at

https://webwork.math.rice.edu/webwork2/Math102Spring22Worden/.

Initial login to WebWork can be done using your net ID as username and student ID as password. You should then change your password. Generally speaking, online homework is assigned Monday, Wednesday, and Friday, with Monday's homework due the following Thursday, Wednesday's homework due the following Saturday, and Friday's homework due the following Tuesday. However, some exceptions to this schedule will likely be made. All WebWork assignments are already scheduled on WebWork, so you can view them there to see exactly on what days they are assigned/due. In order to benefit as much as possible from WebWork, when working on assignments you should work your

solutions on paper as you would if you were going to hand them in (i.e., neatly and showing all work), then enter the solutions online.

There will also be weekly written homework. These will typically be assigned on Wednesday of each week. On the calendar, written homework assignments appear on the day on which they are assigned, and the due date is indicated. Directly to the right is a link to the solutions, which will become active at 12pm on the day the assignment is due. For each of these assignments, solutions will be submitted via Gradescope (see below). No late homework will be accepted (except in exceptional cases at my discression). However, the four lowest-scoring WebWork assignments will be dropped at the end of the semester, as will the two lowest-scoring written homework.

Gradescope: Written homework will be managed through Gradescope. You can self-enroll in the course using the class code: **WYRY8B**. For instruction on using Gradescope to submit homework, see this PDF: https://tinyurl.com/y3wxdewr. **Please make sure Gradescope submissions are clear, and oriented correctly (not sideways), and solutions are correctly linked to pages.** Written homework solutions should be organized, clear, with work shown. **Points will be taken off for messy, illegible, or disorganized work.**

Working on homework with others: You are encouraged to work with your classmates on homework, with the following considerations. First, you should give serious thought to an exercise, and try to come to a solution by yourself, before discussing it with others. The purpose of collaboration is to help each other understand the concepts, think about the problem, and discuss approaches to reaching a solution. Your goal should be to come out of a collaboration with an understanding of how to do a certain type of problem, not just the particular problem you were assigned. Most importantly, you should always write up your solutions (or submit them to WebWork) on your own.

Whether working by yourself or with others, you should never look up solutions to problems online. Calculators will not be allowed for exams, and therefore you should not use them when working on homework (unless directed otherwise). It is your duty under the Honor Code, and in your own best interests as you prepare for exams, to follow the above guidelines.

Attendance: Attendance is mandatory, however, on the rare occasion that you are unable to attend class, your absence will be excused automatically—you should send me an email to let me know that you will be out, but you don't need to get my permission. Attendance is worth 5% of your grade, but you will get the full 5% as long as you are not absent excessively. If you find that you need to be absent from class a lot, please reach out to me so that I know what is going on (if you do this, and you have a good reason for being absent, you will not lose your attendance grade).

Grading: Online and written homework will together account for 23% of your grade (11.5% each). Attendance will account for 5% of your grade. The three exams (Midterm 1/Midterm 2/Final) will be worth a total of 72% of your course grade, and will be weighted (5/5/6) or (4/5/7) or (5/4/7), whichever gives you the highest grade.

The aim in Math 102 is that letter grades should not depend on whether a student's section is an "easy" or "hard" section. To that end, when computing final course grades, a student's exam scores are normalized against exam scores of all students in Math 102 this semester (not just those in this section), while a student's non-exam scores are normalized against the non-exam scores of students in this section. In particular, students should not assume that having higher raw scores on homework than on exams will necessarily increase their final letter grade.

Collegiality and Respect: The Department of Mathematics supports an inclusive learning environment where diversity and individual differences are understood, respected, and recognized as a source of strength. Racism, discrimination, harassment, and bullying will not be tolerated. We expect all participants in mathematics courses (students and faculty alike) to treat each other with courtesy and respect, and to adhere to the mathematics department standards of collegiality, respect, and sensitivity as well as the Rice Student Code of Conduct. If you think you have experienced or witnessed unprofessional or antagonistic behavior, then the matter should be brought to the attention of the instructor and/or department chair. The Ombudsperson is also available as an intermediate, informal option, and contacting them will not necessarily trigger a formal inquiry.

Title IX Responsible Employee Notification: Rice University cares about your wellbeing and safety. Rice encourages any student who has experienced an incident of harassment, pregnancy discrimination or gender discrimination or relationship, sexual, or other forms interpersonal violence to seek support through The SAFE Office. Students should be aware when seeking support on campus that most employees, including myself, as the instructor/TA, are required by Title IX to disclose all incidents of non-consensual interpersonal behaviors to Title IX professionals on campus who can act to support that student and meet their needs. For more information, please visit safe.rice.edu or email titleixsupport@rice.edu.

Disability Resources: If you have a documented disability that may affect academic performance, you should: 1) make sure this documentation is on file with Disability Resource Center (Allen Center, Room 111 / adarice@rice.edu / x5841) to determine the accommodations you need; and 2) contact me to discuss your accommodation needs and provide me with a copy of your Accommodation Letter.

Disclaimer: This syllabus is subject to change, though I will do my best to avoid this. Students will be notified of any changes as early as possible, and will be consulted for feedback as these decisions are made.